

REMARKS

This communication is in response to the Office Action mailed on March 10, 2004. In the Office Action, claims 1-10, and 15-17 were pending of which claims 1-10, and 15-17 were rejected.

The Office Action reports that the Information Disclosure Statement filed September 11, 2003 failed to comply with 37 CFR 1.98(a)(2) because legible copies of foreign references AM, AN, AO, BM, BN, BO, CM, DL, FL, FM, AND FN were not submitted. Applicants also note that in the IDS filed September 11, 2003, the priority application was incorrectly listed and should have been 09/610,748 filed July 6, 2000. Applicants further note that an International Preliminary Examination Report mailed on May 17, 2004 for International Application No. PCT/US02/41813 filed on December 30, 2002 has been received. Enclosed herewith Applicants submit an Information Disclosure Statement, form PTO-1449 and references cited therein. Applicants believe to be in compliance with 37 CFR 1.98(a)(2) and respectfully request entry of the Information Disclosure Statement and PTO-1449 and references cited therein.

The Office Action next reports that claims 1-2, 4-5, and 8-9 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,200,263 to Gould et al. (hereinafter "Gould"). In responding to arguments presented in a previous amendment filed on December 23, 2003, the Office Action indicates that the plates of Gould are affixed to a top surface of the fabric substrate by way of the elastomeric material encapsulating the plates and that the Applicants' claims do not recite the manner in which the plates are affixed to the fabric.

Claim 1 has been amended and recites, "A fabric comprising a woven fabric substrate and a plurality of guard plate assemblies affixed to a top surface of the fabric substrate in a spaced relationship to each other, each guard plate assembly including a first layer of material affixed to the top surface of the fabric substrate, the first layer of each guard plate assembly collectively providing a plurality of non-overlapping,

polygonal guard plates permeating at least the top surface of the fabric substrate to affix to the fabric substrate, and a second layer of material joined to the first layer of material on a surface opposite the fabric substrate." [emphasis added]

Thus, the plurality of plates permeate at least the top surface of the fabric substrate to affix to the fabric substrate. This permeation feature of claim 1 is illustrated at least at first layer 18 in FIGS. 2-4. In contrast, Gould discloses a puncture and cut resistant material having a plurality of plates 25 encapsulated in an elastomeric layer 15. Gould specifically provides,

It is believed that the best flexibility and elasticity of the composite material will be present in those cases wherein the elastomeric material does not adhere well to the platelets 25, i.e., where the platelets 25 are contained within encapsulating pockets in the elastomer to thereby allow the surrounding material to flex and stretch about the platelets 25 without restriction. This is referred to as "decoupling"...[Col. 7, lines 25-32, emphasis added]

Thus, it is respectfully submitted that platelets 25 in Gould do not permeate the fabric substrate as in claim 1. Also, it is submitted that Gould teaches away from having plates that permeate the fabric substrate by teaching the platelets 25 should be encapsulated and de-coupled within an elastomeric material to provide a more flexible and elastic material.

In contrast, the present inventions have a different mechanism of maintaining fabric flexibility, e.g. bendability or twistability. The present Specification provides,

Gaps 26 are desired between adjacent guard plate assemblies 14 in order to maintain flexibility of the fabric 10, which allows the fabric 10 to exhibit properties of softness, bendability and twistability. [Specification, page 7, lines 20-24; emphasis added]

Therefore, flexibility is not maintained because the plates are de-coupled from the fabric substrate (as in Gould) but due in part to the gaps between adjacent guard plates.

In light of the foregoing, it is respectfully submitted that claim 1 is patentable over Gould.

The Office Action next reports that claims 1-3, 8, and 15-17 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,853,854 to Nakanishi et al. (hereinafter Nakanishi). Nakanishi discloses a multi-layer structure of a base sheet and a rugged pattern of predetermined shapes adhered to the base sheet and is embodied as an athletic shoe sole.

It is noted that independent claim 1 was also amended so that the fabric substrate is a "woven" material. The Office Action states that Nakanishi teaches a fabric substrate at Col. 6, line 28. However, Nakanishi provides that its fabric substrate or base material 22 can be, for example, "a synthetic resin material, a rubber material, a nonwoven fabric material or the like." [emphasis added] Thus, Nakanishi teaches away from using a woven fabric as a base material by enumerating only nonwoven materials as suitable for basic material 22. Thus, it is respectfully submitted that claim 1 is patentable over Nakanishi.

Independent claim 15 has also been amended and recites a fabric comprising a woven fabric substrate and a single layer of non-overlapping guard plate assemblies affixed to a top surface of the fabric substrate, wherein each guard plate assembly includes a printed polygonal shaped first layer of material directly joined to the top surface of the fabric substrate, and a second layer of material joined to the first layer of material opposite the fabric substrate. [emphasis added]

Claim 15 has been amended so that the fabric substrate is "woven" and wherein each guard plate assembly has a "printed polygonal shaped first layer of material". Comments relating to claim 1 are incorporated herein. The Office Action states that the elastomer in Nakanishi is printable. Claim 15 has been amended so that the first layer is "printed" rather than "printable". It is

believed that a first layer of material printed on a fabric substrate as in claim 15 is structurally distinguishable to those skilled in the art when compared with the elastomer poured or molded on a base material to form a shoe sole as disclosed in Nakanishi. This "printed" feature of claim 15 is believed to be supported in the present Specification at least at page 9, line 24 to page 10, line 19. In light of the foregoing, it is respectfully submitted that claim 15 is patentable over Nakanishi.

The Office Action next reports that claims 1-2, 10, and 15-16 were rejected under 35 U.S.C. §103(a) as unpatentable over U.S. Patent No. 4,810,559 to Fortier et al. (hereinafter Fortier). Fortier discloses a protective web having a plurality of platelets 9 applied to a substrate and used to reinforce parts of garments corresponding to parts of the human body most at risk to scratching or fleshing during activities such as motorcycling.

The Office Action states that in Fortier the first layer would be glue and that one skilled in the art could apply glue to the plates and then stick the plates on the fabric. Also, applying the glue to the plates would give the glue layer a polygonal shape.

Applicants submit that Fortier does not disclose features of a plurality of non-overlapping, polygonal guardplates permeating at least the top surface of a fabric substrate (claim 1) nor a single layer of non-overlapping guard plate assemblies ..., wherein each guard plate assembly includes a printed polygonal shaped first layer of material (claim 15). Fortier simply does not disclose how glue 11 affixes plates 9 to substrate 7, nor whether glue 11 conforms to the shape of plates 9, nor whether glue 11 would be polygonal as featured in both claims 1 and 15. The present written description at least at page 9, line 24 to page 10, line 19 describes a precise and selective process for applying polygonal guardplates.

Also, it is noted that Fortier provides,

The platelets 9 may have any external form but are preferably circular with a slightly convex upper surface and with free edges that are rounded to prevent them from being hooked onto a rough surface.  
[Col. 2, lines 36-39, emphasis added]

Therefore, it is submitted that Fortier teaches away from polygonal guardplates because such plates would not have the rounded edges preferred in Fortier. Indeed, polygonal shaped plates would seemingly be undesirable in Fortier due to relatively sharp corners that could be caught or hooked on a rough surface.

Also, the present Specification, at least at page 7, lines 17-20, describes the fabric as limiting risk of penetration by limiting size of gap 26. Polygonal shaped guardplates provide gaps (also illustrated in FIGS. 1 and 5) between adjacent plates that can be linear, uniform in width than shapes having rounded edges.

In light of the foregoing, it is respectfully submitted that claim 1 is patentable over the prior art. Claims 2-10 depend on claim 1 and are believed to be separately patentable. As to claim 15, the remarks relating to claim 1 above are incorporated by reference herein. Therefore, it is respectfully submitted that claim 15 is patentable over the cited art. Claims 16-17 depend on claim 15 and are believed to be separately patentable. Reconsideration and allowance of claims 1-10 and 15-17 are respectfully requested.

Claims 18 and 19 are new and depend on claim 1. Claim 18 recites the fabric of claim 1, wherein a lesser extent of each of the plurality of polygonal guard plates permeate the top surface of the fabric substrate. This feature is believed to be disclosed in FIGS. 2-4 because a lesser extent of first layer 18 is illustrated as permeating fabric substrate 16. Claim 19 is similar to claim 18 but instead recites the fabric of claim 1, wherein a greater extent of height of each of the plurality of polygonal guard plates extends above the top surface of the

fabric substrate. This feature is also believed to be disclosed in FIGS. 2-4.

Claim 20 recites the fabric of claim 1, wherein the plurality of polygonal guard plates define a plurality of approximately linear gaps between adjacent plates, and wherein each of the linear gaps is approximately uniform in width. These additional features are illustrated at least at FIGS. 1 and 5, which clearly disclose approximately linear gaps between adjacent plates.

In light of the foregoing, it is believed that claims 18-20 are supported in the application as originally filed and present no new matter. Also, claims 18-20 depend on claim 1 and are believed to be separately patentable over the cited art. Favorable action on claims 18-20 is solicited.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

WESTMAN, CHAMPLIN & KELLY, P.A.

By:

  
Linda P. Ji, Reg. No. 49,027  
Suite 1600 - International Centre  
900 Second Avenue South  
Minneapolis, Minnesota 55402-3319  
Phone: (612) 334-3222 Fax: (612) 334-3312